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EXAMINER	
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ART UNIT	PAPER NUMBER
2164	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,850	BENNETT ET AL.	
	Examiner	Art Unit	
	Alicia M. Lewis	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7-9 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7-9 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is responsive to the communication filed September 23, 2008. Claims 1 is currently amended, claims 2 and 4-6 are canceled, and claim 18 has been added. Therefore, claims 1, 3, 7-9 and 18 are pending in this application.

Claim Objections

1. Regarding claim 9, the phrase "is able to" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 7, 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg et al. (US 5,201,046, *patent date 4/6/1993*) ('Goldberg') in view of Roge et al. ('Roge') (US 6,721,202, *filing date 12/21/2001)*, and further in view of Kay et al. ('Kay') (US 6,349,274, *patent date 2/19/2002*).

With respect to claim 1, Goldberg teaches a graph engine for manipulation data in a database, the graph engine comprising (Figure 3):

a context engine configured to read information from one or more cells derived from standardized database statements as context data blocks (column 11 line 60 – column 12 line 10, column 15 lines 15-32), each of the one or more cells (column 13 lines 35-43) including a header and a payload (Figure 7, column 13 line 44 – column 14 line 30), the header of each of the one or more cells instructing the graph engine how to process the cell (column 13 lines 47-59);

a read engine configured to read data from the database by matching arguments against entries in the database and returning results from the database (column 20 lines 24-37, column 20 line 57 – column 21 line 3); and

a write engine configured to write data into the database by creating an entry in the database and writing data to that entry in the database (column 15 lines 20-32, column 16 line 30 – column 17 line 15);

wherein information stored in the database is represented in memory in the form of one or more graph data structures, each graph data structure including one or more sub-trees (Figures 1 and 4, column 3 lines 28-31, column 6 lines 52-55).

Goldberg does not teach wherein the read engine operates by reading data from a location in memory and comparing the contents of the memory location with a search object, the read engine using differential bits between the contents of the memory location and the search object to retrieve addresses that point to subsequent memory locations.

Roge teaches a bit encoded ternary content addressable memory cell (see abstract), in which he teaches wherein the read engine operates by reading data from a location in memory and comparing the contents of the memory location with a search object, the read engine using differential bits between the contents of the memory location and the search object (column 5 lines 65-67, column 6 lines 9-18) to retrieve addresses that point to subsequent memory locations (column 1 lines 29-36, column 6 lines 33-50, column 7 lines 1-7).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Goldberg by the teaching of Roge because wherein the read engine operates by reading data from a location in memory and comparing the contents of the memory location with a search object, the read engine using differential bits between the contents of the memory location and the search object to retrieve addresses that point to subsequent memory locations would enable a CAM device to be used to perform fast searches of a database (Roge, column 1 lines 16-18).

Further regarding claim 1, Goldberg in view of Roge does not teach wherein the graph engine is implemented entirely in hardware, and wherein the entire database resides in one of random-access memory and flash memory.

Kay teaches a configuration manager for configuring a data acquisition system (see abstract), in which he teaches wherein the graph engine is implemented entirely in

hardware, and wherein the entire database resides in one of random-access memory and flash memory (abstract).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Goldberg by the teaching of Kay because wherein the graph engine is implemented entirely in hardware, and wherein the entire database resides in one of random-access memory and flash memory would enable an improved DAQ system and method for intelligently managing access to DAQ system configuration information, including hardware settings and stored configuration files, as well as for providing access to capabilities of DAQ objects (Kay, column 2 lines 24-28).

With respect to claim 3, Goldberg as modified teaches wherein each of the one or more sub-trees includes profile data, differential bit matching, and results (Goldberg, Figures 1 and 4, column 3 lines 28-31, column 10 line 66—column 11 line 13; Roge, column 2 line 66 – column 3 line 14).

With respect to claim 7, Goldberg as modified teaches wherein the standardized database statements are structured query language statements (Goldberg, column 8 lines 24-30, column 14 lines 57-60).

With respect to claim 9, Goldberg as modified teaches wherein the graph engine is able to process multiple cells representing multiple instructions by pipelining (Roge, column 5 lines 45-49).

With respect to claim 18, Goldberg teaches a graph engine for manipulation data in a database, the graph engine comprising (Figure 3):

a context engine configured to read information from one or more cells derived from standardized database statements as context data blocks (column 11 line 60 – column 12 line 10, column 15 lines 15-32), each of the one or more cells (column 13 lines 35-43) including a header and a payload (Figure 7, column 13 line 44 – column 14 line 30), the header of each of the one or more cells instructing the graph engine how to process the cell (column 13 lines 47-59);

a read engine configured to read data from the database by matching arguments against entries in the database and returning results from the database (column 20 lines 24-37, column 20 line 57 – column 21 line 3); and

a write engine configured to write data into the database by creating an entry in the database and writing data to that entry in the database (column 15 lines 20-32, column 16 line 30 – column 17 line 15);

wherein information stored in the database is represented in memory in the form of one or more graph data structures, each graph data structure including one or more sub-trees (Figures 1 and 4, column 3 lines 28-31, column 6 lines 52-55).

Goldberg does not teach wherein the write engine operates by identifying the first differential bit between the contents of a memory location in the database and a search object, and wherein the write engine is further operable to create a new entry in the database by writing information beginning at the location of the first differential bit.

Roge teaches a bit encoded ternary content addressable memory cell (see abstract), in which he teaches wherein the write engine operates by identifying the first differential bit between the contents of a memory location in the database and a search object, and wherein the write engine is further operable to create a new entry by writing information beginning at the location of the first differential bit (column 1 lines 21-23) (*Roge teaches that data may be written into the first empty location within the CAM, which would represent the first differential bit*).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Goldberg by the teaching of Roge because wherein the write engine operates by identifying the first differential bit between the contents of a memory location in the database and a search object, and wherein the write engine is further operable to create a new entry in the database by writing information beginning at the location of the first differential bit would enable a CAM device to be used to perform fast searches of a database (Roge, column 1 lines 16-18).

Further regarding claim 18, Goldberg in view of Roge does not teach wherein the graph engine is implemented entirely in hardware, and wherein the entire database resides in one of random-access memory and flash memory.

Kay teaches a configuration manager for configuring a data acquisition system (see abstract), in which he teaches wherein the graph engine is implemented entirely in hardware, and wherein the entire database resides in one of random-access memory and flash memory (abstract).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Goldberg by the teaching of Kay because wherein the graph engine is implemented entirely in hardware, and wherein the entire database resides in one of random-access memory and flash memory would enable an improved DAQ system and method for intelligently managing access to DAQ system configuration information, including hardware settings and stored configuration files, as well as for providing access to capabilities of DAQ objects (Kay, column 2 lines 24-28).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldberg et al. (US 5,201,046, *patent date 4/6/1993*) ('Goldberg') in view of Roge et al. ('Roge') (US 6,721,202, *filing date 12/21/2001)*, and further in view of Kay et al. ('Kay') (US 6,349,274, *patent date 2/19/2002*), as applied to claims 1, 3, 7, 9 and 18 above, and further in view of Upton (US Patent 7,080,092 B2).

With respect to claim 8, Goldberg in view of Roge and Kay teaches claim 1.

Goldberg in view of Roge and Kay does not teach wherein the standardized database statements are extensible markup language statements.

Upton teaches an application view component for system integration (see abstract) in which he teaches wherein the standardized database statements are extensible markup language statements (column 27 lines 28-44, column 28 lines 13-29).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have further modified Goldberg by the teaching of Upton because wherein the standardized database statements are extensible markup language statements would enable applications the ability to have different views in an interface that allows manipulation of data in the database by non-programmers using underlying database statements without actually knowing the standardized statements (Upton, abstract).

Response to Arguments

4. Applicant's arguments filed September 23, 2008 have been fully considered but they are not persuasive. Applicant argues that Roge does not teach using differential bits to retrieve addresses that point to subsequent locations. Examiner disagrees. Roge teaches retuning addresses in column 1, and he further teaches using differential bit lines during a read or write operation and using differential compare lines during search or compare operation (column 6 lines 15-18). Roge goes on to teach that match

flags are used to find corresponding match lines, and in response to finding a match line, matching addresses are made available (column 6 lines 33-42). Thus, Roge teaches the limitation above.

5. Further n response to applicant's argument that Roge fails to teach comparing contents of the memory location with a search object to retrieve addresses that point to subsequent memory locations, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

6. Applicant further argues that Kay fails to teach a graph engine implemented in hardware and a database residing entirely in one of random-access memory and flash memory. Examiner disagrees. As shown above in the 35 U.S.C. 103 rejection of claims 1 and 18, the Examiner states that Goldberg teaches a graph engine for manipulating data in a database (Figure 3). However, Goldberg does not teach that his graph engine is implemented in hardware. Thus, Kay has been used to teach implementation of an engine in hardware, which he teaches through his DAQ hardware (abstract, column 1 lines 33-35). As explained by Kay, a DAQ system is used to perform a variety of functions, including data logging (column 1 lines 19-24), as in a database. The DAQ system comprises a computer system with DAQ hardware. An engine may be defined as a processor, and thus the DAQ hardware, which is used to process data (such as perform data logging), may be considered an engine. Thus, Kay teaches an engine implemented in hardware. Furthermore, Kay teaches that the

memory of the computer system stores a hardware database and that the DAQ system comprises a computer system coupled to a data acquisition device. Anything done in a computer may be considered implemented in hardware, as a computer must contain hardware.

7. Lastly, Kay teaches that the database is stored in a memory (abstract), and more specifically that nonvolatile memory 162 stores the hardware database (column 6 lines 38-41). Applicant argues that a hard drive is neither random-access memory nor flash memory. However at column 6 line 41, Kay teaches that the database is stored nonvolatile memory, which includes flash memory.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Lewis whose telephone number is 571-272-5599. The examiner can normally be reached on Monday - Friday, 9 - 6:30, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on 571-272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. M. L./
Examiner, Art Unit 2164
January 29, 2009

/Charles Rones/
Supervisory Patent Examiner, Art Unit 2164